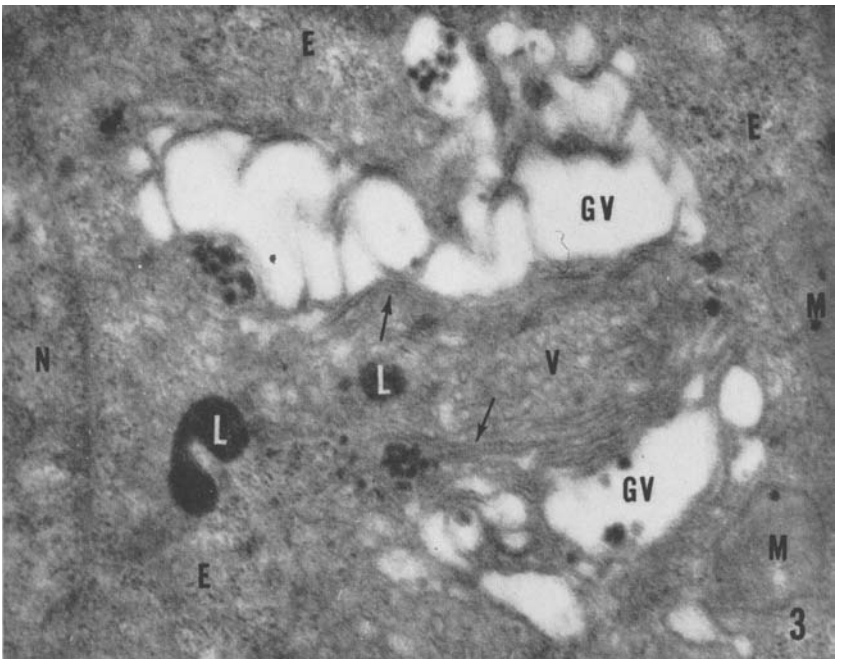


Figure 6.14. Electron micrograph of Golgi complex in a principal cell of the duodenum of a mouse. The arrows mark the Golgi membrane (Golgi lamellae or flattened cisternal sacs). Also indicated are GV: Golgi vacuoles; V: Golgi vesicles; L: Lipid droplets; M: mitochondria; N: nucleus; and E: ergastoplasm (endoplasmic reticulum). Reproduced from A. J. Dalton and M. D. Felix (1956), A comparative study of the Golgi complex, *Journal of Biophysical and Biochemical Cytology, 2* (No. 4, Part 2), 79–84, Figure 3, plate 27, by copyright permission of the Rockefeller University Press.

Before Palade returned to studying the Golgi apparatus, electron microscopy, especially studies by Albert Dalton, played a major role in providing additional information about its structure. In an initial study, Dalton (1951b) found no evidence of the formation of myelin forms when hepatic and intestinal epithelial cells were fixed with Champy's fluid. Nonetheless, a membranous network was visible in electron micrographs in the parts of cells where the Golgi apparatus had typically been detected, thereby undercutting Palade and Claude's proposal as to how the Golgi arose as an artifact.[37] In several subsequent studies with Marie Felix, Dalton uncovered the detailed structure

[37] Dalton's subsequent research with Felix further challenged Palade and Claude's proposal. By examining the process of fixation, they determined that the Golgi material responded very differently than lipid droplets, thereby dispelling Palade and Claude's contention that the Golgi apparatus was an artifact produced from such lipid droplets.